

PATENT APPLICATION

AMENDMENT UNDER 37 C.F.R. § 1.114
U.S. Application No. 09/834,343

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A plasma reactor electrode comprising:

a first, upper plate for the transfer of RF energy, said upper plate being made of electrically conductive material, and having a first plurality of holes cut into it;

a second, lower plate for the transfer of RF energy, said lower plate being made of electrically conductive material, and having a second plurality of holes cut into it; and

a plurality of pins connecting inserted into the respective first and second pluralities of holes to connect the upper and lower plates, said pins being made of a thermally conductive material to facilitate thermal conductivity during RF energy transfer;

wherein said upper and lower plates are connected with said pins to form a plenum chamber.

2. (Original) An electrode as claimed in claim 1, further comprising a dielectric cover disposed below the lower plate.

3. (Original) An electrode as claimed in claim 2, wherein said dielectric cover is bonded to said lower plate.

4. (Original) An electrode as claimed in claim 1, wherein said electrode is part of a showerhead assembly, with holes extending through said lower plate and said cover.

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5. (Currently amended) An electrode as claimed in claim 1, further comprising an outer ring surrounding said upper and lower plates; a first O ring disposed between said upper plate and said outer ring; and ~~the~~ a second O ring disposed between said lower plate and said outer ring;

wherein said first and second O rings, said outer ring, and said first and second plates are configured to form [[a]] said plenum chamber; and

wherein a plurality of holes are formed to provide uniform gas distribution in conjunction with said plenum chamber.

6. (Original) An electrode as claimed in claim 2, wherein said dielectric cover is made of a material selected from the group consisting of ceramic and quartz.

7. (Original) An electrode as claimed in claim 5, wherein said outer ring comprises a material selected from the group consisting of ceramic and quartz.

8. (Original) An electrode as claimed in claim 1, further comprising a lid disposed over said upper plate.

9. (Original) An electrode as claimed in claim 8, wherein said lid is made of aluminum.

10. (Original) An electrode as claimed in claim 1, wherein said plurality of pins comprise aluminum, and said upper and lower plates comprise aluminum.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

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14. (Currently Amended) A plasma reaction chamber comprising:

 a chamber; and

 a plasma reactor electrode, said electrode comprising:

a first, upper plate for the transfer of RF energy, said upper plate being made of electrically conductive material, and having a first plurality of holes cut into it;

a second, lower plate for the transfer of RF energy, said lower plate being made of electrically conductive material, and having a second plurality of holes cut into it; and

a plurality of pins inserted into the respective first and second pluralities of holes to connect the upper and lower plates, said pins being made of a thermally conductive material to facilitate thermal conductivity during RF energy transfer;

wherein said upper and lower plates are connected with said pins to form a plenum chamber ~~a first, upper plate for the transfer of RF energy, a second, lower plate for the transfer of RF energy, and a plurality of pins for connecting said first and second plates to facilitate thermal conductivity during RF energy transfer.~~

15. (Currently Amended) A chamber as claimed in claim 14, further comprising an outer ring surrounding said upper and lower plates, and respective O rings between said upper plate and said outer ring, and said lower plate and said outer ring, so as to form ~~[[a]]~~ said plenum chamber with said upper and lower plates, said outer ring, and said O rings.

16. (Original) A chamber as claimed in claim 14, further comprising a dielectric cover attached to said lower plate.